SUMMARY of

O. REG. 419/05 STANDARDS and

POINT of IMPINGEMENT GUIDELINES & AMBIENT AIR QUALITY CRITERIA (AAQCs)

(Sorted by CAS Number)

STANDARDS DEVELOPMENT BRANCH
ONTARIO MINISTRY of the ENVIRONMENT

December 2005

INTRODUCTION

Ontario Regulation 419/05 “Air Pollution – Local Air Quality” under the *Environmental Protection Act (EPA)* (‘Regulation 419/05’)revokes and replaces Regulation 346 “General – Air Pollution” on November 30, 2005. Regulation 419/05 is the primary regulatory tool for creating standards for contaminants that are protective of local air quality and which emitters in Ontario must meet.

In addition to listing the standards that are found in Schedules 1, 2 and 3 of O. Reg. 419/05, this document lists the current Ministry of the Environment (MOE) Point of Impingement (POI) Guidelines and Ambient Air Quality Criteria (AAQC). While this document provides general information on the phase-in of the standards, Regulation 419/05 takes precedence over this document and should be referred to for a full account of the requirements relating to the phase in of standards contained in Schedules 1, 2 and 3 of the Regulation.

There are a number of differences between the current and previously released listings of standards, guidelines and AAQCs. This is primarily due to the fact that O. Reg. 419/05 introduces several new standards, phases in the requirement to meet effects-based standards (Schedule 3 of the Regulation), and phases in the requirement to use U.S. Environmental Protection Agency air dispersion models (i.e. ‘approved dispersion models’ referred to in s. 6(2) of Regulation 419/05).

The basic approach in the standard setting process is to develop AAQCs, which are acceptable effects-based levels in air, with variable averaging times (e.g., 24 hr, 1 hr, 10 minutes) appropriate for the effect. The effects considered may be based on health, odour, vegetation, soiling, visibility, corrosion or other effects. To develop the half-hour average standards (i.e., those in Schedules 1 and 2) and also the half-hour POI guidelines, generally the most conservative half-hour value, derived from the AAQCs of variable averaging times, is selected. Regulation 419/05 phases in the effects-based air standards set out in Schedule 3 of the Regulation (referred to as AAQCs in the previous version of this document).

Schedule 1 will apply between November 30, 2005 and February 1, 2010. As of Feburary 1, 2010, Schedule 2 applies to all sectors for whom phase-in of Schedule 3 has not occurred, as follows:

- On February 1, 2010, Schedule 3 will apply to sectors listed in Schedule 4 of Regulation 419/05.
- On February 1, 2013, Schedule 3 will apply to sectors listed in Schedule 5 of Regulation 419/05.
- On February 1, 2020, Schedule 3 will apply to all sectors/emitters in Ontario.

It is important to note that there are some exceptions (i.e. ‘new facilities’ and facilities subject to ‘speed up’ notices and orders) to these general phase in rules. Please refer to sections 18, 19 and 20 of Regulation 419/05 for a full account of these exceptions.

Some contaminants are not listed in Schedules 1, 2 and 3 of the Regulation, but are instead listed as a half-hour POI guideline or an AAQC in this document. The Regulation allows a Director to issue certain Notices and impose certain notification requirements on emitters if a discharge from a facility may cause an adverse effect. Exceedence of a POI guideline or of an AAQC may cause adverse effects and as such could trigger the issuance of a Director's Notice. (Please refer to O. Reg. 419/05 for more specifics).

Applicants for approval under Section 9 of the EPA will be required to demonstrate compliance with the appropriate POI guideline and/or AAQC for the contaminants that are the subject of the application.

If a contaminant is not listed in this document, there may still be concerns regarding the contaminant and its potential to cause adverse effects. Further direction on the issue of how to consider contaminants without limits is included in the *Guide to Applying for Approval (Air and Noise).* This document may be found on the Ministry's website and will be of particular interest to those preparing an application for a Certificate of Approval or an amendment to an existing Certificate of Approval pursuant to s. 9 of the *Environmental Protection Act.*.

This document is comprised of (i) a table listing of MOE standards, POI guidelines and AAQCs and (ii) explanatory endnotes. The table is divided into three main sections:

- The *left-hand* section of the table includes: (i) a simple number counter, (ii) the Chemical Abstracts Services number (CAS No.), which is a unique, universal identifier for a substance and (iii) the contaminant name listed in alphabetical order. Another list, containing the same information, but sorted according to CAS numbers is also available on the Ministry's website.

- The *middle* section of the table contains the three Schedules of O. Reg. 419/05 that list the standards. The middle section also refers to endnotes that explain the phase-in of Schedules 1, 2 and 3 of O. Reg. 419:
    - Schedule 1 - contains the half-hour standards as they existed under O. Reg. 346 plus 6 additional contaminants that were previously guidelines and have been converted into standards.
    - Schedule 2 – is similar to Schedule 1 but contains updated and/or new half-hour standards for some contaminants.
    - Schedule 3 – contains effects-based standards with various appropriate averaging times.

- The *right-hand* section of the table contains the POI guidelines and Ambient Air Quality Criteria (AAQCs).

It should be noted that the limiting effect for the standards, guidelines and AAQCs are identified in brackets beside the respective limits. As well, definition of terms and symbols are included at the end of the table.

In addition, it should be noted that the concept of Upper Risk Thresholds (see s. 30 and Schedule 6 of O. Reg. 419/05 for the contaminants with Upper Risk Thresholds) was introduced in Regulation 419/05. It should be noted that exceedance of an Upper Risk Threshold triggers certain requirements under Regulation 419/05. Please refer to s. 30 of Regulation 419/05 for a full account of the requirements relating to Upper Risk Thresholds.

Summary of O. Reg. 419/05 Standards and Point of Impingement (POI) Guidelines & Ambient Air Quality Criteria (AAQCs)

December 2005

			O.Reg. 419/05 Schedule 1 Applicability Dates: See Note # 1	**O.Reg. 419/05 Schedule 2** Applicability Dates: See Note # 2	**O. Reg. 419/05 Schedule 3** Applicability Dates: See Note # 3			**List of POI Guidelines and AAQCs**			
								Point of Impingement (POI) Guideline	**Ambient Air Quality Criteria (AAQCs)[13]**		
Item	CAS No.	Contaminant Name	Half Hour Standard ($\mu g/m^3$)[4]	Half Hour Standard ($\mu g/m^3$)[4 & 5]	One Hour Standard ($\mu g/m^3$)[4 & 5]	24 Hour Standard ($\mu g/m^3$)[4 & 5]	Other Time Period Standard ($\mu g/m^3$-time period)[4 & 5]	Half Hour ($\mu g/m^3$)[4]	24 Hour ($\mu g/m^3$)[4]	1 Hour ($\mu g/m^3$)[4]	10 Minute ($\mu g/m^3$)[4]
1	50-00-0	Formaldehyde	65 (Odour/Irritation)	65 (Odour/Irritation)	-	65 (Health)	-				
2	50-32-8	Benzo(a)pyrene - single source	-	-	-	-	-	0.0033 (Health)	0.0011(Health)		
3	50-32-8	Benzo(a)pyrene - all sources	-	-	-	-	-		0.0003 [ANNUAL] (Health)		
4	52-86-8	Haloperidol	-	-	-	-	-	0.3 (Health)	0.1 (Health)		
5	55-18-5	Nitrosodiethylamine, N-	-	-	-	-	-		CARC		
6	55-63-0	Nitroglycerin	-	-	-	-	-	10 (Health)	3 (Health)		
7	56-23-5	Carbon tetrachloride	7.2 (Health)	7.2 (Health)	-	2.4 (Health)	-				
8	56-35-9	Tributyltin oxide	-	-	-	-	-	0.42 (Health)	0.14 (Health)		
9	57-55-6	Propylene glycol	-	-	-	-	-	100 (Particulate)	120 (Particulate)		
10	57-74-9	Chlordane	-	-	-	-	-	15 (Health)	5 (Health)		
11	58-89-9	Lindane (Hexachlorocyclohexane)	-	-	-	-	-	15 (Health)	5 (Health)		
12	60-00-4	Ethylenediaminetetra acetic acid	-	-	-	-	-	100 (Particulate)	120 (Particulate)		
13	60-29-7	Ethyl ether	7000 (Interim [4a])	700 (Odour)	-	8000 (Health)	-				950 (Odour)
14	62-56-6	Thiourea	-	-	-	-	-	60 (Health)	20 (Health)		
15	62-75-9	Nitrosodimethylamine, N-	-	-	-	-	-		CARC		
16	64-17-5	Ethanol (Ethyl alcohol)	-	-	-	-	-	19000 (Odour)		TBU[11]- 19000 (Odour)	
17	64-18-6	Formic acid	1500 (Health)	1500 (Health)	-	500 (Health)	-				
18	64-19-7	Acetic acid	2500 (Odour)	2500 (Odour)	-	-	-		TBU[11]- 2500 (Odour)		
19	65-85-0	Benzoic acid	-	-	-	-	-	2100 (Health)	700 (Health)		
20	67-56-1	Methanol (Methyl alcohol)	12000 (Health)	12000 (Health)	-	4000 (Health)	-				
21	67-63-0	Isopropanol (Isopropyl Alcohol)	-	22000 (Health)	-	7300 (Health)	-	24000[5a]	24000[5a]		
22	67-63-0	Propanol, iso- (Isopropyl alcohol, Isopropanol)	-	-	-	-	-	24000 (Odour)	TBU[11]- 24000 (Odour)		
23	67-64-1	Acetone	48000 (Odour)	35640 (Health)	-	11880 (Health)	-				
24	67-66-3	Chloroform	300 (Interim[4a])	3 (Health)	-	1 (Health)	-				
25	67-68-5	Dimethyl sulfoxide	-	-	-	-	-	6300 (Health)	2100 (Health)		
26	71-23-8	Propanol, n- (Propyl alcohol)	-	-	-	-	-	48000 (Health)	16000 (Health)		
27	71-36-3	Butanol, n-	-	-	-	-	-	2278 (Odour)		15000 (Health)	3100 (Odour)
28	71-43-2	Benzene	-	-	-	-	-		CARC		
29	71-55-6	Methyl chloroform (1-1-1 Trichloroethane)	350000 (Health)	350000 (Health)	-	115000 (Health)	-				
30	72-43-5	Methoxychlor	-	-	-	-	-	100 (Particulate)	120 (Particulate)		
31	74-83-9	Methyl bromide	-	-	-	-	-	4000 (Health)	1350 (Health)		
32	74-85-1	Ethylene	-	-	-	-	-	UD	40 (Vegetation)		
33	74-86-2	Acetylene	56000 (Odour)	56000 (Odour)	-	-	-		TBU[11]- 56000 (Odour)		
34	74-87-3	Methyl chloride	-	-	-	-	-	20000 (Health)	7000 (Health)		
35	74-89-5	Monomethyl amine	25 (Odour)	25 (Odour)	-	-	-		TBU[11]- 25 (Odour)		
36	74-90-8	Hydrogen cyanide	See Note # 14	24 (Health)	-	8 (Health)	-				
37	74-93-1	Mercaptans (as Methyl mercaptan) - total	20 (Odour)	20 (Odour)	-	-	-			TBU[11]- 20 (Odour)	
38	75-01-4	Vinyl chloride	3 (Health)	3 (Health)	-	1 (Health)	-				
39	75-05-8	Acetonitrile	-	210 (Health)	-	70 (Health)	-				
40	75-07-0	Acetaldehyde	500 (Health)	500 (Health)	-	500 (Health)	500 (Health); ½-hr				
41	75-09-2	Methylene chloride	-	660 (Health)	-	220 (Health)	-	5300[5a](*Interim*)	220(Health)[5a]		
42	75-11-6	Methylene iodide	-	-	-	-	-	195 (Health)	65 (Health)		
43	75-15-0	Carbon disulphide	330 (Odour)	330 (Odour)	-	-	-		TBU[11]- 330 (Odour)		
44	75-18-3	Dimethyl sulphide	30 (Odour)	30 (Odour)	-	-	-			TBU[11]- 30 (Odour)	
45	75-20-7	Calcium carbide	-	-	-	-	-	20 (Corrosion)	10 (Corrosion)		
46	75-21-8	Ethylene oxide	-	-	-	-	-	15 (Health)	5 (Health)		
47	75-25-2	Bromoform	-	-	-	-	-	165 (Health)	55 (Health)		
48	75-34-3	Dichloroethane, 1,1-	-	-	-	-	-	600 (Health)	200 (Health)		
49	75-35-4	Vinylidene chloride (1,1-Dichloroethene)	30 (Health)	30 (Health)	-	10 (Health)	-				
50	75-44-5	Phosgene	130 (Health)	130 (Health)	-	45 (Health)	-				
51	75-45-6	Chlorodifluoromethane (Freon 22)[7]	-	-	-	-	-	1050000 (Health)[7]	350000 (Health)[7]		

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								Point of Impingement (POI) Guideline	**Ambient Air Quality Criteria (AAQCs)[13]**		
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52	75-50-3	Trimethyl amine	-	-	-	-	-	0.5 (Odour)		TBU[11]- 0.5 (Odour)	
53	75-56-9	Propylene oxide	450 (Interim [4a])	4.5 (Health)	-	1.5 (Health)	-				
54	75-65-0	Butanol, tertiary	-	-	-	-	-	UD	30300 (Health)		
55	75-69-4	Trichlorofluoromethane[7]	-	-	-	-	-	18000 (Health)[7]	6000 (Health)[7]		
56	75-71-8	Difluorodichloromethane (Freon 12)[7]	-	-	-	-	-	1500000 (Health)[7]	500000 (Health)[7]		
57	76-05-1	Trifluoroacetic acid	-	-	-	-	-	45 (Health)	15 (Health)		
58	76-13-1	Trifluorotrichloroethane[7]	2400000 (Health)[7]	2400000 (Health)[7]	-	800000 (Health)[7]	-				
59	76-14-2	Dichloro-1,1,2,2-tetrafluoroethane, 1,2 (Freon 114)[7]	-	-	-	-	-	2100000 (Health)[7]	700000 (Health)[7]		
60	77-47-4	Hexachlorocyclopentadiene	-	-	-	-	-	6 (Health)	2 (Health)		
61	77-58-7	Dibutyltin dilaurate	-	-	-	-	-	100 (Health)	30 (Health)		
62	77-92-9	Citric acid	-	-	-	-	-	100 (Particulate)	120 (Particulate)	300 (Health)	
63	77-99-6	Trimethylol propane	-	-	-	-	-	100 (Health)	1250 (Health)		
64	78-83-1	Butanol, iso-	-	-	-	-	-	1940 (Odour)		15000 (Health)	2640 (Odour)
65	78-87-5	Propylene dichloride	2400 (Odour)	2400 (Odour)	-	-	-		TBU[11]- 2400 (Odour)		
66	78-93-3	Methyl ethyl ketone (2-Butanone)	30000 (Interim [4a])	3000 (Health)	-	1000 (Health)	-				
67	79-01-6	Trichloroethylene (TCE)	3500 (Interim [4a])	36 (Health)	-	12 (Health)	-				
68	79-06-1	Acrylamide	45 (Health)	45 (Health)	-	15 (Health)	-				
69	79-09-4	Propionic acid	-	-	-	-	-	100 (Odour)		TBU[11]- 100 (Odour)	
70	79-41-4	Methacrylic acid	-	-	-	-	-	2000 (Odour)	TBU[11]- 2000 (Odour)		
71	80-62-6	Methyl methacrylate	860 (Odour)	860 (Odour)	-	-	-		TBU[11]- 860 (Odour)		
72	81-81-2	Warfarin	-	-	-	-	-	30 (Health)	10 (Health)		
73	84-51-5	Ethylanthraquinone, 2-	-	-	-	-	-	30 (Health)	10 (Health)		
74	84-66-2	Diethyl phthalate (DEP)	-	-	-	-	-	100 (Health)	125 (Health)		
75	84-74-2	Dibutyl phthalate (DBP, di-n-butyl phthalate)	-	-	-	-	-	100 (Health)	50 (Health)		
76	84-75-3	Dihexyl phthalate (DHP)	-	-	-	-	-	100 (Health)	50 (Health)		
77	85-00-7	Diquat dibromide - respirable	-	-	-	-	-	0.096 (Health)	0.032 (Health)		
78	85-00-7	Diquat dibromide - total in ambient air	-	-	-	-	-	0.48 (Health)	0.16 (Health)		
79	85-44-9	Phthalic anhydride	100 (Particulate)	100 (Particulate)	-	120 (Particulate)	-				
80	85-68-7	Butyl benzene phthalate	-	-	-	-	-	450 (Health)	150 (Health)		
81	87-86-5	Pentachlorophenol	-	-	-	-	-	60 (Health)	20 (Health)		
82	90-15-3	Naphthol, alpha-	-	-	-	-	-	100 (Health)	100 (Health)		
83	91-20-3	Naphthalene	-	-	-	-	-	36 (Odour)	22.5 (Health)		50 (Odour)
84	91-94-1	Dichlorobenzidine, 3,3-	-	-	-	-	-	CARC	CARC		
85	92-52-4	Biphenyl	-	-	-	-	-	60 (Odour)		60 (Odour)	
86	95-16-9	Benzothiazole	-	-	-	-	-	200 (Health)	70 (Health)		
87	95-50-1	Dichlorobenzene, 1,2-	-	-	-	-	-	37000 (Health)		30500 (Health)	
88	95-63-6	Trimethylbenzene, 1,2,4-	-	-	-	-	-	500 (Odour)	1000 (Health)		
89	96-33-3	Methyl acrylate	4 (Odour)	4 (Odour)	-	-	-			TBU[11]- 4 (Odour)	
90	98-00-0	Furfuryl alcohol	3000 (Health)	3000 (Health)	-	1000 (Health)	-				
91	98-01-1	Furfural	1000 (Odour)	1000 (Odour)	-	-	-			TBU[11]- 1000 (Odour)	
92	98-82-8	Isopropyl benzene	100 (Odour)	100 (Odour)	-	400 (Health)	-				
93	98-83-9	Methyl styrene, alpha	-	-	-	-	-	UD		24000 (Health)	
94	98-86-2	Acetophenone	-	-	-	-	-	625 (Odour)		1167(Health)	850 (Odour)
95	98-88-4	Benzoyl chloride	-	-	-	-	-	350 (Health)	125 (Corrosion & Health)		
96	100-41-4	Ethyl benzene	3000 (Interim [4a])	1400 (Odour)	-	1000 (Health)	-				1900 (Odour)
97	100-42-5	Styrene	400 (Odour)	400 (Odour)	-	400 (Health)	-				
98	100-51-6	Benzyl alcohol	-	-	-	-	-	2640 (Health)	880 (Health)		
99	101-14-4	Methylene-bis-2-chloroaniline, 4,4-	-	-	-	-	-	30 (Health)	10 (Health)		
100	101-68-8	Methane diphenyl diisocyanate (MDI Monomer)	-	2 (Health)	-	0.7(Health)	-	3[5a]	1[5a]		
101	101-77-9	Methylene dianiline	-	-	-	-	-	30 (Health)	10 (Health)		
102	104-76-7	Ethyl hexanol, 2-	-	-	-	-	-	600 (Odour)		TBU[11]- 600 (Odour)	
103	106-46-7	Dichlorobenzene, 1,4-	285 (Health)	285 (Health)	-	95 (Health)	-				
104	106-51-4	Quinone	-	-	-	-	-	45 (Health)	15 (Health)		

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105	106-92-3	Allyl glycidyl ether	-	-	-	-	-	180 (Health)	60 (Health)		
106	106-93-4	Ethylene dibromide	-	-	-	-	-	9 (Health)	3 (Health)		
107	107-02-8	Acrolein	-	0.24 (Health)		0.08 (Health)	0.24 (Health); ½-hr	See Note # 5a		See Note # 5a	
108	107-06-2	Ethylene dichloride	6 (Health)	6 (Health)	-	2 (Health)	-				
109	107-13-1	Acrylonitrile	180 (Interim[4a])	1.8 (Health)	-	0.6 (Health)	-				
110	107-21-1	Ethylene glycol	-	-	-	-	-		12700 (Health)		
111	107-41-5	Hexylene glycol	-	-	-	-	-	14400 (Health)		12000 (Health)	
112	107-98-2	Propylene glycol methyl ether	-	-	-	-	-	89000 (Odour)			121000 (Odour)
113	108-10-1	Methyl isobutyl ketone	1200 (Odour)	1200 (Odour)	-	-	-		TBU[11]- 1200 (Odour)		
114	108-20-3	Isopropyl ether	-	-	-	-	-	220 (Odour)	110000 (Health)		
115	108-21-4	Isopropyl acetate	-	-	-	-	-	1470 (Odour)			2000 (Odour)
116	108-31-6	Maleic anhydride	-	-	-	-	-	100 (Health)	30 (Health)		
117	108-62-3	Metaldehyde (Acetaldehyde tetramer)	-	-	-	-	-	100 (Particulate)	120 (Particulate)		
118	108-65-6	Propylene glycol monomethyl ether acetate	-	-	-	-	-	5000 (Odour)	TBU[11]- 5000 (Odour)		
119	108-83-8	Diisobutyl ketone	-	-	-	-	-	470 (Odour)	3500 (Health)		649 (Odour)
120	108-88-3	Toluene	2000 (Odour)	2000 (Odour)	-	-	-		TBU[11]- 2000 (Odour)		
121	108-90-7	Monochlorobenzene	-	-	-	-	-	4200 (Health)		3500 (Health)	4500 (Odour)
122	108-95-2	Phenol	100 (Health)	100 (Health)	-	30 (Health)	-				
123	109-55-7	Dimethyl-1,3-diamino propane, N,N-	-	-	-	-	-	60 (Health)	20 (Health)		
124	109-60-4	Propyl acetate, n-	-	-	-	-	-	900 (Odour)	6600 (Health)		
125	109-87-5	Methylal	-	-	-	-	-	18000 (Health)	6200 (Health)		
126	109-89-7	Diethyl amine	-	-	-	-	-	UD		2910 (Health)	
127	109-99-9	Tetrahydrofuran	93000 (Odour)	93000 (Odour)	-	-	-		TBU[11]- 93000 (Odour)		
128	110-12-3	Methyl-2-hexanone, 5-	-	-	-	-	-	460 (Odour)			630 (Odour)
129	110-19-0	Isobutyl acetate	-	-	-	-	-	1220 (Odour)			1660 (Odour)
130	110-43-0	Methyl-n-amyl ketone	-	-	-	-	-	UD	4600 (Health)		
131	110-54-3	n-Hexane (mixture)	-	7500 (Health)	-	2500 (Health)	-	See Note # 5a	See Note # 5a		
	110-54-3	n-Hexane (n-Hexane and Hexane isomers only)	-	22500 (Health)	-	7500 (Health)	-	See Note # 5a	See Note # 5a		
132	110-80-5	Ethylene glycol ethyl ether (Cellosolve)	-	-	-	-	-	800 (Odour)	380 (Health)		1100 (Odour)
133	110-82-7	Cyclohexane	-	18300 (Health)	-	6100 (Health)	-	See Note # 5a	See Note # 5a		
134	110-86-1	Pyridine	-	-	-	-	-	60 (Odour)	150 (Health)		80 (Odour)
135	111-15-9	Ethylene glycol ethyl ether acetate (Cell.ace.)	-	-	-	-	-	220 (Odour)	540 (Health)		300 (Odour)
136	111-30-8	Glutaraldehyde	-	-	-	-	-	42 (Health)	14 (Health)	35 (Health)	
137	111-49-9	Hexamethyleneimine	-	-	-	-	-	945 (Health)	315 (Health)		
138	111-65-9	Octane	-	-	-	-	-	45400 (Odour)			61800 (Odour)
139	111-76-2	Ethylene glycol butyl ether (Butyl cellosolve)	-	-	-	-	-	350 (Odour)	2400 (Health)		500 (Odour)
140	111-77-3	Diethylene glycol monomethyl ether	-	-	-	-	-	800 (Odour)	1200 (Health)		
141	111-90-0	Diethylene glycol monoethyl ether	-	-	-	-	-	800 (Odour)			1100 (Odour)
142	111-92-2	Dibutyl amine	-	-	-	-	-	UD		2645 (Health)	
143	112-07-2	Ethylene glycol butyl ether acetate (But. cell.ace.)	-	-	-	-	-	500 (Odour)	3250 (Health)		700 (Odour)
144	112-15-2	Diethylene glycol monoethyl ether acetate	-	-	-	-	-		1800 (Health)		
145	112-25-4	Ethylene glycol monohexyl ether	-	-	-	-	-		2500 (Health)		
146	112-34-5	Diethylene glycol monobutyl ether	-	-	-	-	-		65 (Health)		
147	112-80-1	Oleic acid	-	-	-	-	-	6 (Health)		5 (Health)	
148	115-10-6	Dimethyl ether	-	-	-	-	-	2100 (Odour)	TBU[11]- 2100 (Odour)		
149	117-81-7	Di(2-ethylhexyl) phthalate	100 (Hlth. & Part.)	100 (Hlth. & Part.)	-	50 (Health)	-				
150	117-84-0	Di-n-Octyl phthalate	100 (Hlth. & Part.)	100 (Hlth. & Part.)	-	100 (Hlth. & Part.)	-				
151	119-36-8	Methyl salicylate	-	-	-	-	-	300 (Health)	100 (Health)		
152	120-78-5	Mercaptobenzothiazole disulphide	-	-	-	-	-	100 (Particulate)	120 (Particulate)		

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								Point of Impingement (POI) Guideline	**Ambient Air Quality Criteria (AAQCs)[13]**		
Item	CAS No.	Contaminant Name	Half Hour Standard (µg/m³)[4]	Half Hour Standard (µg/m³)[4 & 5]	One Hour Standard (µg/m³)[4 & 5]	24 Hour Standard (µg/m³)[4 & 5]	Other Time Period Standard (µg/m³-time period)[4 & 5]	Half Hour (µg/m³)[4]	24 Hour (µg/m³)[4]	1 Hour (µg/m³)[4]	10 Minute (µg/m³)[4]
153	120-82-1	Trichlorobenzene, 1,2,4-	-	-	-	-	-	100 (Particulate)	400 (Health)		
154	121-75-5	Malathion	-	-	-	-	-	100 (Particulate)	120 (Particulate)		
155	122-39-4	Diphenylamine	-	-	-	-	-	50 (Health)	17.5 (Health)		
156	123-38-6	Propionaldehyde	-	-	-	-	-	7 (Odour)			10 (Odour)
157	123-42-2	Diacetone alcohol	-	-	-	-	-	990 (Odour)			1350 (Odour)
158	123-62-6	Propionic anhydride (as Propionic acid)	-	-	-	-	-	100 (Odour)		TBU[11]- 100 (Odour)	
159	123-86-4	Butyl acetate, n-	-	-	-	-	-	735 (Odour)		15000 (Health)	1000 (Odour)
160	123-91-1	Dioxane	-	-	-	-	-	UD	3500 (Health)		
161	123-92-2	Amyl acetate, iso-	-	-	-	-	-		53200 (Health & Odour)		
162	123-95-5	Butyl stearate	-	-	-	-	-	100 (Particulate)	120 (Particulate)		
163	124-04-9	Adipic acid	-	-	-	-	-	3500 (Health)	1167 (Health)		
164	124-09-4	Hexamethylenediamine	-	-	-	-	-	48 (Health)	16 (Health)		
165	124-17-4	Diethylene glycol monobutyl ether acetate	-	-	-	-	-		85 (Health)		
166	124-18-5	Decane, n-	-	-	-	-	-	UD		60000(Health & Odour)	
167	124-40-3	Dimethyl amine	-	-	-	-	-	UD		1840 (Health & Odour)	
168	127-18-4	Perchloroethylene	-	1080 (Health)	-	360 (Health)	-	10000 (*Interim*)[5a]	360 (Health)[5a]		
169	127-19-5	Dimethyl acetamide, N,N-	-	-	-	-	-	900 (Health)	300 (Health)		
170	127-20-8	Dalapon sodium salt	-	-	-	-	-	100 (Health)	50 (Health)		
171	131-11-3	Dimethyl phthalate (DMP)	-	-	-	-	-	100 (Health)	125 (Health)		
172	131-15-7	Dicapryl phthalate	100 (Particulate)	100 (Particulate)	-	120 (Particulate)	-				
173	133-06-2	Captan	-	-	-	-	-	75 (Health)	25 (Health)		
174	133-90-4	Chloramben	-	-	-	-	-	100 (Particulate)	120 (Particulate)		
175	137-26-8	Tetramethyl thiuram disulphide	-	-	-	-	-	30 (Health)	10 (Health)		
176	139-13-9	Nitrilotriacetic Acid	100 (Particulate)	100 (Particulate)	-	120 (Particulate)	-				
177	140-88-5	Ethyl acrylate	4.5 (Odour)	4.5 (Odour)	-	-	-			TBU[11]- 4.5 (Odour)	
178	141-32-2	Butyl acrylate	-	-	-	-	-	100 (Particulate)	120 (Particulate)		
179	141-78-6	Ethyl acetate	19000 (Odour)	19000 (Odour)	-	-	-			TBU[11]- 19000 (Odour)	
180	142-82-5	n-Heptane	33000 (Health)	33000 (Health)	-	11000 (Health)	-				
181	143-33-9	Sodium cyanide	-	-	-	-	-	100 (Particulate)	120 (Particulate)		
182	144-62-7	Oxalic acid	-	-	-	-	-	75 (Health)	25 (Health)		
183	151-50-8	Potassium cyanide	-	-	-	-	-	100 (Particulate)	120 (Particulate)		
184	156-59-2	Dichloroethylene, cis-1,2-	-	-	-	-	-	315 (Health)	105 (Health)		
185	156-60-5	Dichloroethylene, trans-1,2-	-	-	-	-	-	315 (Health)	105 (Health)		
186	300-92-5	Aluminum distearate	-	-	-	-	-	100 (Particulate)	2180 (Health)		
187	314-40-9	Bromacil	-	-	-	-	-	30 (Health)	10 (Health)		
188	333-41-5	Diazinon	-	-	-	-	-	9 (Health)	3 (Health)		
189	506-77-4	Cyanogen chloride	-	-	-	-	-	15 (Health)	12 (Health)		
190	540-59-0	Dichloroethylene, sym-1,2-	-	-	-	-	-	315 (Health)	105 (Health)		
191	548-73-2	Droperidol	-	-	-	-	-	3 (Health)	1 (Health)		
192	557-04-0	Magnesium stearate	-	-	-	-	-	100 (Particulate)	35 (Health)		
193	557-05-1	Zinc stearate	-	-	-	-	-	100 (Particulate)	35 (Health)		
194	584-84-9	Toluene di-isocyanate, 2,4-	1 (Health)	0.6 (Health)	-	0.2 (Health)	-				
195	592-01-8	Calcium cyanide (as total salt)	-	-	-	-	-	100 (Particulate)	120 (Particulate)		
196	624-83-9	Methyl isocyanate	-	3 (Health)	-	1 (Health)	-				
197	624-92-0	Dimethyl disulphide	40 (Odour)	40 (Odour)	-	-	-			TBU[11]- 40 (Odour)	
198	626-38-0	Amyl acetate, secondary	-	-	-	-	-		66500 (Health & Odour)		
199	628-63-7	Amyl acetate, n-	-	-	-	-	-		53200 (Health & Odour)		
200	628-96-6	Ethylene glycol dinitrate	-	-	-	-	-	10 (Health)	3 (Health)		
201	630-08-0	Carbon monoxide (single source)[6]	6000 (Health)	6000 (Health)	-	-	6000 (Health); ½-hr				
	630-08-0	Carbon monoxide (multiple sources)	-	-	36200 (Health)	-	15700 (Health); 8 hr				
202	637-12-7	Aluminum tristearate	-	-	-	-	-	100 (Particulate)	2180 (Health)		
203	646-06-0	Dioxolane-1,3	-	-	-	-	-	30 (Health)	10 (Health)		
204	756-79-6	Dimethyl methylphosphonate	-	-	-	-	-		875 (Health)		
205	763-69-9	Ethyl-3-ethoxy propionate	-	-	-	-	-	147 (Odour)			200 (Odour)

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								Point of Impingement (POI) Guideline	**Ambient Air Quality Criteria (AAQCs)[13]**		
Item	CAS No.	Contaminant Name	Half Hour Standard ($\mu g/m^3$)[4]	Half Hour Standard ($\mu g/m^3$)[4 & 5]	One Hour Standard ($\mu g/m^3$)[4 & 5]	24 Hour Standard ($\mu g/m^3$)[4 & 5]	Other Time Period Standard ($\mu g/m^3$-time period)[4 & 5]	Half Hour ($\mu g/m^3$)[4]	24 Hour ($\mu g/m^3$)[4]	1 Hour ($\mu g/m^3$)[4]	10 Minute ($\mu g/m^3$)[4]
206	822-06-0	Hexamethylene Diisocyanate (HDI) Monomer	-	0.1 (Health)	-	0.03 (Health)	-	See Note # 5a	See Note # 5a		
207	872-05-9	Decene, 1-	-	-	-	-	-	180000 (Health)	60000 (Health)		
208	872-50-4	Methyl-2-pyrrolidone, N-	-	-	-	-	-	-	-	40000 (Health)	
209	990-73-8	Fentanyl citrate	-	-	-	-	-	0.06 (Health)	0.02 (Health)		
210	999-97-3	Hexamethyl disilazane	-	-	-	-	-	5 (Health)	2 (Health)		
211	1303-96-4	Borax	-	-	-	-	-	100 (Health)	33 (Health)		
212	1305-62-0	Calcium hydroxide	27 (Corrosion)	27 (Corrosion)	-	13.5 (Corrosion)	-				
213	1305-78-8	Calcium oxide	20 (Corrosion)	20 (Corrosion)	-	10 (Corrosion)	-				
214	1309-37-1	Ferric oxide	75 (Soiling)	75 (Soiling)	-	25 (Soiling)	-				
215	1309-48-4	Magnesium oxide	100 (Particulate)	100 (Particulate)	-	120 (Particulate)	-				
216	1310-58-3	Potassium hydroxide	-	-	-	-	-	28 (Corrosion)	14 (Corrosion)		
217	1310-73-2	Sodium hydroxide	-	-	-	-	-	20 (Corrosion)	10 (Corrosion)		
218	1314-11-0	Strontium oxide	-	-	-	-	-	100 (Particulate)	120 (Particulate)		
219	1319-77-3	Cresols	230 (Health)	230 (Health)	-	75 (Health)	-				
220	1330-20-7	Xylenes	2300 (Odour)	2200 (Health)	-	730 (Health)	-				3000 (Odour)
221	1332-21-4	Asbestos (fibres > 5:m in length)	-	-	-	-	-		0.04 fibres/cm^3 (Health)		
222	1332-21-4	Asbestos (total)	-	-	-	-	-	5 (Health)			
223	1333-86-4	Carbon black	25 (Soiling)	25 (Soiling)	-	10 (Soiling)	-				
224	1336-36-3	Polychlorinated biphenyls (PCBs)	-	-	-	-	-	0.45 (Health)	0.15 (Health)		
225	1338-23-4	Methyl ethyl ketone peroxide	-	-	-	-	-	250 (Health)	80 (Health)	200 (Health)	
226	1344-28-1	Aluminum oxide	-	-	-	-	-	100 (Particulate)	120 (Particulate)		
227	1395-21-7	Detergent enzyme (Subtilisin)	-	-	-	-	-	0.2 (Health)	0.06 (Health)		
228	1406-05-9	Penicillin	-	-	-	-	-	0.3 (Health)	0.1 (Health)		
229	1592-23-0	Calcium stearate	-	-	-	-	-	100 (Particulate)	35 (Health)		
230	1633-05-2	Strontium carbonate	-	-	-	-	-	100 (Particulate)	120 (Particulate)		
231	1634-04-4	Methyl tert-butyl ether	-	-	-	-	-	2200 (Odour)	7000 (Health)		
232	1886-81-3	Dodecyl benzene sulphonic acid	-	-	-	-	-	100 (Particulate)	120 (Particulate)		
233	1910-42-5	Paraquat dichloride - respirable	-	-	-	-	-	0.009 (Health)	0.003 (Health)		
234	1910-42-5	Paraquat dichloride - total in ambient air	-	-	-	-	-	0.045 (Health)	0.015 (Health)		
235	2062-78-4	Pimozide	-	-	-	-	-	3 (Health)	1 (Health)		
236	7783-06-04	Hydrogen sulphide	30 (Odour)	30 (Odour)	-	-	-			TBU[11]- 30 (Odour)	
237	2439-10-3	Dodine	-	-	-	-	-	30 (Health)	10 (Health)		
238	2551-62-4	Sulphur hexafluoride	-	-	-	-	-	1800000 (Health)	600000 (Health)		
239	3622-84-2	Butyl benzene sulphonamide, N-	-	-	-	-	-	105 (Health)	35 (Health)		
240	3779-63-3	HDI Isocyanurate (HDI IC)	-	9 (Health)	-	3 (Health)	-				
241	4035-89-6	HDI Biuret (HDI-BT)	-	9 (Health)	-	3 (Health)	-	9 (Health)[8]	3 (Health)[8]		
242	4559-86-8	Tetrabutylurea	-	-	-	-	-	30 (Health)	10 (Health)		
243	5131-66-8	Butoxy-2-propanol, 1-	-	-	-	-	-	9900 (Health)	3300 (Health)		
244	5329-14-6	Sulfamic acid	-	-	-	-	-	100 (Particulate)	120 (Particulate)		
245	7047-84-9	Aluminum stearate	-	-	-	-	-	100 (Particulate)	2180 (Health)		
246	7439-92-1	Lead	6 (Health)	6 (Health)	-	2 (Health)	0.7; 30-day$^+$ (Health)				
247	7439-92-1	Lead - in dustfall	-	-	-	-	-		0.1 g/m^2/30 day(Health)		
248	7439-93-2	Lithium (other than hydrides)	60 (Health)	60 (Health)	-	20 (Health)	-				
249	7439-96-5	Manganese compounds (including permanganates)	-	-	-	-	-	7.5 (Health)	2.5 (Health)		
250	7439-97-6	Mercury (Hg)	5 (Health)	5 (Health)	-	2 (Health)	-				
251	7439-97-6	Mercury (as Hg) - alkyl compounds	1.5 (Health)	1.5 (Health)	-	0.5 (Health)	-				
252	7439-98-7	Molybdenum	-	-	-	-	-	100 (Particulate)	120 (Particulate)		
253	7440-02-0	Nickel	5 (Vegetation)	5 (Vegetation)	-	2 (Vegetation)	-				
254	7440-06-4	Platinum - water soluble compounds	-	-	-	-	-	0.6 (Health)	0.2 (Health)		
255	7440-22-4	Silver	3 (Health)	3 (Health)	-	1 (Health)	-				
256	7440-24-6	Strontium	-	-	-	-	-	100 (Particulate)	120 (Particulate)		
257	7440-31-5	Tin	30 (Health)	30 (Health)	-	10 (Health)	-				
258	7440-32-6	Titanium	100 (Particulate)	100 (Particulate)	-	120 (Particulate)	-				

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								Point of Impingement (POI) Guideline	**Ambient Air Quality Criteria (AAQCs)[13]**		
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259	7440-36-0	Antimony	75 (Health)	75 (Health)	-	25 (Health)	-				
260	7440-38-2	Arsenic and compounds	-	-	-	-	-	1 (Health)	0.3 (Health)		
261	7440-39-3	Barium - total water soluble	-	-	-	-	-	30 (Health)	10 (Health)		
262	7440-41-7	Beryllium and compounds	0.03 (Health)	0.03 (Health)	-	0.01 (Health)	-				
263	7440-42-8	Boron	100 (Particulate)	100 (Particulate)	-	120 (Particulate)	-				
264	7440-43-9	Cadmium and compounds	5 (Health)	5 (Health)	-	2 (Health)	-				
265	7440-47-3	Chromium, di-, tri- and hexavalent forms	-	-	-	-	-	5 (Health)	1.5 (Health)		
266	7440-48-4	Cobalt	-	-	-	-	-	0.3 (Health)	0.1 (Health)		
267	7440-50-8	Copper	100 (Health)	100 (Health)	-	50 (Health)	-				
268	7440-62-2	Vanadium	5 (Health)	5 (Health)	-	2 (Health)	-				
269	7440-66-6	Zinc	100 (Particulate)	100 (Particulate)	-	120 (Particulate)	-				
270	7446-09-5	Sulphur dioxide	830 (Health)	830 (Health)	690 (Health&Veg)	275 (Health & Veg.)	-				
271	7580-67-8	Lithium hydrides	7.5 (Health)	7.5 (Health)	-	2.5 (Health)	-				
272	7631-90-5	Sodium bisulphite	-	-	-	-	-	100 (Particulate)	120 (Particulate, Health)		
273	7631-99-4	Sodium nitrate	-	-	-	-	-	100 (Particulate)	7000 (Health)		
274	7637-07-2	Boron trifluoride	5 (Vegetation)	5 (Vegetation)	-	2 (Vegetation)	-				
275	7646-85-7	Zinc chloride	-	-	-	-	-	12 (Health)		10 (Health)	
276	7647-01-0	Hydrogen chloride	100 (Interim [4a])	60 (Health)	-	20 (Health)	-				
277	7657-10-1	Palladium - water soluble compounds	-	-	-	-	-	30 (Health)	10 (Health)		
278	7664-38-2	Phosphoric acid (as P_2O_5)	100 (Particulate)	100 (Particulate)	-	120 (Particulate)	-				
279	7664-39-3	Fluoridation-as total fluorides, total (Growing Season)	-	-	-	-	-		40 µg/100cm^2/30 day (Veg.)		
280	7664-39-3	Fluoridation-as total fluorides, total (Non-Growing Season)	-	-	-	-	-		80 µg/100cm^2/30 day (Veg.)		
281	7664-39-3	Fluorides (as HF) - Gaseous (Growing Season)	4.3 (Vegetation)	4.3 (Vegetation)	-	0.86 (Vegetation)	0.34; 30-day(Vegetation)				
282	7664-39-3	Fluorides (as HF) - Total (Growing Season)	8.6 (Vegetation)	8.6 (Vegetation)	-	1.72 (Vegetation)	0.69; 30-day(Vegetation)				
283	7664-39-3	Fluorides (as HF) - Total (Non-Growing Season)	17.2 (Vegetation)	17.2 (Vegetation)	-	3.44 (Vegetation)	1.38; 30-day(Vegetation)				
284	7664-39-3	Fluorides in dry forage-dry weight	-	-	-	-	-		35 ppm/30 day ave.* 80 ppm/30 day ave.** 60 ppm/60 day ave.*** (Effects on animals)		
285	7664-41-7	Ammonia	3600 (Interim[4a])	300 (Health)	-	100 (Health)	-				
286	7664-93-9	Sulphuric acid	100 (Corrosion)	100 (Corrosion)	-	35 (Corrosion)	-				
287	7697-37-2	Nitric acid	100 (Corrosion)	100 (Corrosion)	-	35 (Corrosion)	-				
288	7722-84-1	Hydrogen peroxide	-	-	-	-	-	90 (Health)	30 (Health)		
289	7726-95-6	Bromine	70 (Health)	70 (Health)	-	20 (Health)	-				
290	7757-79-1	Potassium nitrate	-	-	-	-	-	100 (Particulate)	120 (Particulate)		
291	7758-19-2	Sodium chlorite	-	-	-	-	-	60 (Health)	20 (Health)		
292	7772-99-8	Stannous chloride (as Sn)	-	-	-	-	-	30 (Health)	10 (Health)		
293	7775-09-9	Sodium chlorate	-	-	-	-	-	18 (Health)	6 (Health)		
294	7782-49-2	Selenium	-	-	-	-	-	20 (Health)	10 (Health)		
295	7782-50-5	Chlorine	300 (Interim[4a])	30 (Health)	-	10 (Health)	-				230 (Odour)
296	7784-42-1	Arsine	10 (Health)	10 (Health)	-	5 (Health)	10 (Health); ½-hr				
297	7803-51-2	Phosphine	-	-	-	-	-	30 (Health)	10 (Health)		
298	7803-62-5	Silane	-	-	-	-	-	450 (Health)	150 (Health)		
299	8007-45-2	Coal tar pitch volatiles - soluble fraction	-	-	-	-	-	3 (Health)	1 (Health)		
300	9010-98-4	Polychloroprene	-	-	-	-	-	100 (Particulate)	500 (Health)		
301	9016-87-9	Polymeric methane diphenyl diisocyanate (PMDI)	-	2 (Health)	-	0.7 (Health)	-				
302	10024-97-2	Nitrous oxide	-	-	-	-	-	27000 (Health)	9000 (Health)		
303	10025-87-3	Phosphorous oxychloride	-	-	-	-	-	40 (Health)	12 (Health)		

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304	10026-13-8	Phosphorous pentachloride	-	-	-	-	-	30 (Health)	10 (Health)		
305	10028-15-6	Ozone	200 (Health)	200 (Health)	165 (Health)	-	-				
306	10035-10-6	Hydrogen bromide	-	-	-	-	-	800 (Health)		668 (Health)	
307	10043-35-3	Boric acid	-	-	-	-	-	100 (Health)	33 (Health)		
308	10049-04-4	Chlorine dioxide	85 (Health)	85 (Health)	-	30 (Health)	-				
309	10102-44-0	Nitrogen oxides[10]	500 (Health)	500 (Health)	400 (Health)	200 (Health)	-				
310	10294-33-4	Boron tribromide	100 (Corrosion)	100 (Corrosion)	-	35 (Corrosion)	-				
311	10294-34-5	Boron trichloride	100 (Corrosion)	100 (Corrosion)	-	35 (Corrosion)	-				
312	12108-13-3	Methylcyclopentadienyl manganese tricarbonyl (MMT)	-	-	-	-	-	30 (Health)	10 (Health)		
313	12125-02-9	Ammonium chloride	-	-	-	-	-	100 (Particulate)	120 (Particulate)		
314	13463-39-3	Nickel carbonyl	1.5 (Health)	1.5 (Health)	-	0.5 (Health)	-				
315	13463-67-7	Titanium dioxide	-	-	-	-	-	100 (Health)	34 (Health)		
316	13494-80-9	Tellurium (except hydrogen telluride)	30 (Health)	30 (Health)	-	10 (Health)	-				
317	14464-46-1	Silica - respirable (<10 µm diameter), cristabolite	-	-	-	-	-	15 (Health)	5 (Health)		
318	14807-96-6	Talc - fibrous	-	-	-	-	-	5 (Health)	2 (Health)		
319	14808-60-7	Silica - respirable (<10 µm diameter), quartz	-	-	-	-	-	15 (Health)	5 (Health)		
320	15438-31-0	Iron (metallic)	10 (Soiling)	10 (Soiling)	-	4 (Soiling)	-				
321	15468-32-3	Silica - respirable (<10 µm diameter), tridymite	-	-	-	-	-	15 (Health)	5 (Health)		
322	17702-41-9	Decaborane	50 (Health)	50 (Health)	-	25 (Health)	-				
323	18480-07-4	Strontium hydroxide	-	-	-	-	-	100 (Particulate)	120 (Particulate)		
324	19287-45-7	Diborane	20 (Health)	20 (Health)	-	10 (Health)	-				
325	19624-22-7	Pentaborane	3 (Health)	3 (Health)	-	1 (Health)	-				
326	22832-87-7	Miconazole nitrate	-	-	-	-	-	15 (Health)	5 (Health)		
327	25377-83-7	Octene, 1-	-	-	-	-	-	150000 (Health)	50000 (Health)		
328	26471-62-5	Toluene di-isocyanate, 2,4- and 2,6- (mixed isomers)	-	0.6 (Health)	-	0.2 (Health)	-				
329	28182-81-2	HDI Polyisocyanate (HDI-BT & HDI-IC)	-	9 (Health)	-	3 (Health)	-				
330	35711-34-3	Tolmetin sodium	-	-	-	-	-	15 (Health)	5 (Health)		
331	70657-70-4	Methoxy-1-propyl acetate, 2-	-	-	-	-	-	4600 (Health)	1530 (Health)		
332	88230-35-7	Oxo-hexyl acetate	-	-	-	-	-	255 (Health)	85 (Health)		
333	90438-79-2	Oxo-heptyl acetate	-	-	-	-	-	255 (Health)	85 (Health)		
334	N/A	Alkyltoluene sulphonamide, N-	-	-	-	-	-	100 (Particulate)	120 (Particulate)		
335	N/A	Chlorinated dibenzo-p-dioxins (CDDs) [See Note 12]	-	-	-	-	-	15 pg TEQ/m^3 (Health)	5 pg TEQ/m^3 (Health)		
336	N/A	Dustfall	8000 µg/m^2 (Soiling)	8000 µg/m^2 (Soiling)	-	-	7 g/m^2; 30-day(Soiling)				
337	N/A	Fluorinert 3M-FC-70	-	-	-	-	-	100 (Particulate)	120 (Particulate)		
338	N/A	Milk powder	20 (Soiling)	20 (Soiling)	-	20 (Soiling & Odour)	-				
339	N/A	Mineral spirits[9]	7800 (Interim [4a])	3000 (Odour)	-	2600 (Health)	-				
340	N/A	Polybutene-1-sulphone	-	-	-	-	-	100 (Particulate)	120 (Particulate)		
341	N/A	Suspended particulate matter (< 44 µm Diameter)	100 (Visibility)	100 (Visibility)	-	120 (Visibility)	-				
342	N/A	Total reduced sulphur (as hydrogen sulphide)	-	-	-	-	-	40 (Odour)		TBU[11]- 40 (Odour)	
343	N/A	Tripropyltin methacrylate	-	-	-	-	-	3 (Health)	1 (Health)		
344	N/A	Whey powder	-	-	-	-	-	100 (Particulate)	120 (Particulate)		

NOTES:

1: O.Reg. 419/05 Schedule 1 Standards to be used with the dispersion models in the Appendix to Regulation 346 (for further information see Appendix C in the *Air Dispersion Modelling Guideline for Ontario*). For phase-out of Schedule 1 see Table 1 below.

2: O.Reg. 419/05 Schedule 2 Standards to be used with the dispersion models in the Appendix to Regulation 346 (for further information see Appendix C in the *Air Dispersion Modelling Guideline for Ontario*). For phase-in of Schedule 2, see Table1 below.

3: O.Reg. 419/05 Schedule 3 Standards to be used with the U.S. EPA models listed in s. 6 of O. Reg. 419/05 (i.e., SCREEN 3; ISCST3; ISCPRIME; and AERMOD. For further information on how to use these models see, the *Air Dispersion Modelling Guideline for Ontario* and also the *Procedure for Preparing an Emission Summary and Dispersion Modelling Report* (http://www.ene.gov.on.ca/envision/gp/3614e02.pdf). For phase-in of Schedule 3, see Table 1 below.

Table 1 – Phase in of Schedules in O. Reg. 419/05

Type of Facility	Nov. 30, 2005	Feb. 1, 2010	Feb. 1, 2013	Feb. 1, 2020
Existing Facility that is not in Schedule 4 or 5	Schedule 1 s. 18	Schedule 2 s.19	Schedule 2 s.19	Schedule 3 s.20
Existing Facility that is in Schedule 4	Schedule 1 s. 18	Schedule 3 s.20	Schedule 3 s.20	Schedule 3 s.20
Existing Facility that is in Schedule 5	Schedule 1 s. 18	Schedule 2 s.19	Schedule 3 s.20	Schedule 3 s.20
New Facility that is not in Schedule 4 or 5	Schedule 1 s. 18	Schedule 2 s.19	Schedule 2 s.19	Schedule 3 s.20
New Facility that is in Schedule 4 or 5	Schedule 3 s.20	Schedule 3 s.20	Schedule 3 s.20	Schedule 3 s.20
Facility requesting and obtaining a s.20(4) Notice	Schedule 3 s.20	Schedule 3 s.20	Schedule 3 s.20	Schedule 3 s.20
Facility given a s.20(5) Order	N/A	Schedule 3 s.20	Schedule 3 s.20	Schedule 3 s.20

- Schedule 4 Target Sectors (with NAICS Code in brackets) are: Metal Ore Mining (2122);Fossil-Fuel Electric Power Generation (221112); Petroleum Refineries (324110); Basic Chemical Manufacturing (3251); Resin, Synthetic Rubber, and Artificial and Synthetic Fibres and Filaments Manufacturing (3252); Iron and Steel Mills and Ferro-Alloy Manufacturing (3311); Non-Ferrous Metal (except Aluminum) Smelting and Refining (331410); Foundries (3315).
- Schedule 5 Target Sectors (with NAICS Code in brackets) are: Pulp, Paper and Paperboard Mills (3221); Other Petroleum and Coal Products Manufacturing (324190); Chemical Manufacturing (325); Urethane and Other Foam Product (except Polystyrene) Manufacturing (326150);

Other Non-Metallic Mineral Product Manufacturing (3279); Primary Metal Manufacturing (331); Fabricated Metal Product Manufacturing (332); Transportation Equipment Manufacturing (336); Waste Treatment and Disposal (5622).

4: The limiting effects for the MOE POI Limits, which include standards, guidelines and AAQCs, are identified in brackets beside the respective limits.

4a: Limiting effect is designated as 'interim' for these contaminants until standards in Schedule 2 and 3 are phased in.

5: Most of the standards in Schedules 2 and 3 are based on the most recent Ambient Air Quality Criteria (AAQCs) developed via the Ministry's standard setting process. Although O. Reg. 419 does not require facilities to meet standards in Schedule 2 or 3 until they are phased-in (i.e., Notes # 2 & 3), working towards meeting these standards and using these standards in making assessment decisions is advisable and strongly encouraged.

5a: This endnote pertains to the following substances, (CAS #s in brackets): Acrolein (107-02-8); Cyclohexane (110-82-7); HDI monomer(Hexamethylene diisocyanate monomer)(882-06-0); Isopropanol (67-63-0); MDI monomer (Methane diphenyl diisocyanate monomer) (101-68-8); Methylene chloride (75-09-2); n-Hexane (mixture)(110-54-3); n-Hexane (n-Hexane and Hexane isomers only)(110-54-3); and Perchloroethylene (127-18-4).

These chemicals were previously guidelines, and after consultation, have become standards in Schedules 2 and 3 under O. Reg. 419/05. However, these contaminants have no standard in Schedule 1 for use between November 30, 2005 and February 1, 2010. POI guidelines are listed in this document for some of these substances [i.e., for Isopropanol (67-63-0); MDI monomer (Methane diphenyl diisocyanate monomer) (101-68-8); Methylene chloride (75-09-2); and Perchloroethylene (127-18-4)]. These noted POI guidelines will be discontinued on February 1, 2010, when Schedules 2 and 3 get phased in.

However, for a subset of these substances [i.e., for Acrolein, Cyclohexane, HDI monomer (Hexamethylene diisocyanate monomer), n-Hexane (mixture), n-Hexane (n-Hexane and Hexane isomers only)] the POI guideline is not listed. This is because the Upper Risk Thresholds (URTs) in Schedule 6 of O.Reg. 419/05 are lower than the previously listed guidelines.

Until the standards for this subset become effective (i.e. when s.19 or s.20 of O. Reg 419/05 applies to a facility), applications for s.9 (of the EPA) Certificates of Approvals, and Emission Summary and Dispersion Modelling Reports prepared in accordance with O. Reg. 419/05, will be assessed using the concentrations set out in Schedule 6 of the O.Reg. 419/05.

Furthermore, the Ministry may use the principles in the *Guideline for Implementation of Air Standards in Ontario* (http://www.ene.gov.on.ca/envision/gp/5166e.pdf) to assess/impose an appropriate limit or appropriate action for these contaminants on a site-specific basis where warranted. It is important to note that all facilities must demonstrate compliance with the standards in Schedule 2 or 3 (depending on which Schedule applies to the facility) by February 1, 2010.

6: Half-hour standard for carbon monoxide is based on high background levels from automobiles (i.e., individual facilities are only allowed a small fraction of the total airshed).

7: See O. Reg. 717/94 "Solvents" under the Environmental Protection Act, which is based on the Montreal Protocol, for further restrictions on these, and several other ozone depleting substances.
8: Previously HDI Biuret (HDI-BT) had a 1/2 hr POI guideline of 3 µg/m³ and an AAQC of 1 µg/m³ (24-hour). These values have been changed to 9 µg/m³ and 3 µg/m³ respectively, effective November 30, 2005. This is to ensure that the HDI-BT guidelines, which will be in use until February 1, 2010, are identical to the Schedule 2 and Schedule 3 standards of O.Reg 419/05. Since the standard has become less stringent, no implementation difficulties are expected and the 5-year phase-in period is considered not applicable. Therefore, for persons held to Schedule 1, the compliance point for this substance will be 9 µg/m³ (unless a C of A imposes a more stringent standards).

9: Mineral spirits are petroleum distillate mixtures of C_7-C_{12} alkanes (paraffins, cycloalkanes, naphthalenes) with 15-20% aromatic hydrocarbons, of which less than 0.1 % is benzene. The typical boiling points range from 130-220 ^{o}C and flash points range from 21-60 ^{o}C. Please see Rationale document: "Ontario Air Standards for Mineral Spirits" for further detail on the Ministry's website.

10: Nitrogen oxides (NOx) are defined to be the sum of nitrogen dioxide (NO2) and nitric oxide (NO). Emissions of NOx consist mainly of NO, with some NO2 . In ambient air, NO converts to NO2 . NO2 has adverse effects at much lower concentrations than NO. Recognizing these factors, the AAQCs, which are now Schedule 3 standards in O. Reg. 419/05, were based on the health effects of NO2.

In assessing NOx emissions for compliance purposes (e.g., source modelling, C of A) with respect to Schedules 1, 2 or 3 in O.Reg 419/05, the sum of NO and NO2 emissions should be expressed collectively as **nitrogen dioxide (NO2) equivalents.**

In general, air quality assessment (e.g., air quality reporting) the Schedule 3, 1 hr avg. or 24 hr avg. standards (previously AAQCs), should only be compared to monitored NO2 data.

11: TBU =To Be Updated. These odour-based AAQCs (either 24 hr avg or 1 hr avg) are 'TBU' - flagged, since the Ministry plans to update them in the future to a more appropriate odour-based averaging time (i.e., 10 minutes). In addition, these contaminants may need the development of a health-based AAQC. At this point they provide the basis of the 1/2 hour MOE POI Limits.

12: Calculation of TEQ (Toxicity Equivalent):

International toxicity equivalency factors (I-TEFs) are applied to 17 dioxin and furan isomers of concern to convert them into 2,3,7,8-TCDD (tetrachlorodibenzo-p-dioxin) toxicity equivalents. The conversion involves multiplying the concentration of the isomer by the appropriate I-TEF to yield the TEQ for this isomer. Summing the individual TEQ values for each of the isomers of concern provides the total toxicity equivalent level for the sample mixture. A table, listing the 17 isomers of concern and their I-TEFs can be found in the MOEE publication titled: Environment Information - Dioxins & Furans; PIBS 681b, revised 08/91 or in the example Table 2 below.

13: For contaminants with AAQCs but no ½ hr POI limits (for example dibutyl amine, CAS #: 111-92-2), the current interim measure of using the AAQC concentration value as a half-hour POI limit (i.e., without time adjustment modification) is continued as a screening approach [e.g., in determining whether Maximum Concentration Level (MCL) Assessment Submissions from proponents or Acceptability of Maximum Ground Level Concentration (GLC) requests are required].

14: The standard for Hydrogen cyanide (74-90-8) was withdrawn from Schedule 1. In light of the new standards proposed in Schedule 2 and 3, the previous Schedule 1 standard was considered unacceptably high. Therefore (in analogy with guidance in Note 5a), until the standards for Hydrogen cyanide become effective (i.e. when s.19 or s.20 of O. Reg 419/05 applies to a facility), applications for s.9 (of the EPA) Certificates of Approvals, and Emission Summary and Dispersion Modelling Reports prepared in accordance with O. Reg. 419/05, will be assessed using the concentrations set out in Schedule 6 of the O.Reg. 419/05.

TERMS and SYMBOLS:

CARC: Carcinogen. This entry implies that there is no assigned standard or guideline at this time. Emissions to the environment are to be prevented or limited to the greatest extent possible

N/A: Not Available

UD: Under development

Growing Season**:** May 1 - September 30 - Northern Ontario, Northern Region
April 1 - October 31 - Southern Ontario, SW, WC, E & C Regions

Non Growing Season: October 1 - April 30 - Northern Ontario, Northern Region
November 1 - March 31 - Southern Ontario, SW, WC, E & C Regions

* average monthly results for growing season

** average results for any single month

*** average of 2 consecutive months

$^{+}$ = arithmetic mean

$^{++}$ = geometric mean

Table 2 - Sample Calculation for Toxicity Equivalent Values for Chlorinated Dioxin and Furan compounds

Dioxin/Furan Isomers of Concern	International Toxicity Equivalency Factors (I-TEFs)	Concentration pg/m^3 (Analytically measured)	Toxicity Equivalent (TEQ) pg TEQ/m^3
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1	0.01	0.01
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	0.5	0.011	0.0055
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	0.1	0.006	0.0006
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	0.1	0.01	0.001
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	0.1	0.019	0.0019
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	0.01	0.15	0.0015
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin	0.001	-	-
2,3,7,8-Tetrachlorodibenzofuran	0.1	0.11	0.011
2,3,4,7,8-Pentachlorodibenzofuran	0.5	0.033	0.0165
1,2,3,7,8-Pentachlorodibenzofuran	0.05	0.024	0.0012
1,2,3,4,7,8-Hexachlorodibenzofuran	0.1	0.03	0.003
1,2,3,6,7,8-Hexachlorodibenzofuran	0.1	0.016	0.0016
1,2,3,7,8,9-Hexachlorodibenzofuran	0.1	0.016	0.0016
2,3,4,6,7,8-Hexachlorodibenzofuran	0.1	0.007	0.0007
1,2,3,4,6,7,8-Heptachlorodibenzofuran	0.01	0.047	0.00047
1,2,3,4,7,8,9-Heptachlorodibenzofuran	0.01	0.008	0.00008
1,2,3,4,6,7,8,9-Octachlorodibenzofuran	0.001	-	-
TOTAL TOXICITY EQUIVALENT			**0.05665***

* Sum of toxicity equivalents of individual isomers.

The I-TEF scheme is intended to be used with isomer specific analytical results.